

British Medical Journal.

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TREATMENT OF VARICOSE ULCERATION.

IN May, 1926, the Ministry of Health submitted to the British Medical Association a scheme for collective research by insurance practitioners, and in January, 1927, it outlined definite schemes for such investigations to be conducted by the Association and Ministry working in collaboration. The Ministry proposed that these inquiries should be undertaken by general practitioners engaged in the insurance medical service, and should be confined to insured persons. A special research subcommittee appointed by the Council of the Association to consider these proposals reported in due course to the Science Committee. Its recommendations were: (1) that any scheme of research must be voluntary and unpaid; (2) that it must not be restricted either to insurance practitioners or to insured persons; (3) that it should be organized by the British Medical Association through the Divisions; and (4) that the subjects chosen for inquiry should be of such a nature that they could be treated in a simple manner. The subcommittee expressed the opinion also that a medical adviser to correlate the returns and advise the practitioners taking part would be necessary for a successful investigation. Following these preliminaries a discussion took place between the subcommittee and representatives of the Ministry of Health, when the Chief Medical Officer, Sir George Newman, cordially welcomed the suggestions outlined above. Eventually it was decided to initiate two concurrent inquiries—one into the treatment of varicose ulceration, and the other into the after-history of patients who had undergone the operation of gastro-entrostomy.

At this stage the Association applied to the Medical Research Council for financial assistance to pay a medical adviser to control the investigations, but the Council replied that it was not convinced that a scheme of collective inquiry was likely to give useful results except where some definite new clue had been obtained by intensive research of another kind, and where new evidence was sought along a line precisely indicated. The members of the subcommittee, however, were convinced that the united experience of doctors engaged in a properly conducted collective investigation ought to yield data of great clinical value.

The first inquiry has now been completed, and its results are set out in the report published at page 1144 this week. The Council of the Association has been extremely fortunate in securing as Honorary Director of Research Dr. A. P. Luff, consulting physician to St. Mary's Hospital, Home Office Analyst, and a member of the Food Preservatives Committee appointed by the Ministry of Health. We feel that it will in no way detract from the valuable and accurate information that practitioners throughout the country have given if we say that Dr. Luff's work in correlating and presenting the case for them is above all praise, and has contributed in a high degree to the success of the investigation. The names of two other members of the special subcommittee should also be mentioned for the encouragement and support they gave to this piece of research—Dr. C. E. Douglas (who acted as chairman) and Professor W. E. Dixon.

Varicose ulceration is a common disease, and every general practitioner is required to treat it. It causes not only pain and discomfort, but is responsible for a very great deal of disability, especially among women. The treatment is tedious, the results are often disappointing, and relapse is common, so that it was most desirable to collect information with regard to the best form of treatment, particularly as it was known that some practitioners were more successful than others in their results. One of the most remarkable points brought out by this inquiry was the great variety of methods employed at the present day for the alleviation or cure of a single well-defined condition. Scores of different local applications appeared to be used by individual practitioners, zinc preparations of one kind or another far outnumbering all the rest. Dr. Luff's report, which reviews in detail the statistical side, will be studied by our readers everywhere with the greatest interest. It has established the value of a collective investigation of this kind as an important branch of practical as opposed to academic research. Dr. Luff, in his conclusion, says that the investigation shows that in order to obtain the best results "it would be advisable for the medical practitioner to limit the treatment of varicose ulceration to two procedures. The first is injection of the veins in combination with the use of Unna's zinc gelatin for the local treatment of the ulcer; the second is the use of Unna's zinc gelatin alone if injection is refused, or for other reasons cannot be carried out. It should also be borne in mind that treatment by ultra-violet rays appears to be reliable, provided that the proper administration of these rays is available." Besides these positive findings it seems worth while to emphasize the point that the once widely used treatment of varicose ulcers by administration of calcium salts, with or without parathyroid extract, has completely failed to establish itself as a trustworthy therapeutic measure.

The report conclusively indicates the best treatment prevailing at the present time for a known pathological condition, and this information has been derived from the collective evidence of a great number of general practitioners. It may be accepted that those who took part in the investigation, numbering 550 in all, belong to the keenest and most observant class of doctors—men and women anxious to assist not only their patients, but their colleagues as well. If the results of the inquiry are made the basis for future treatment of this widespread condition it is obvious that a large amount of disability will be prevented, with consequent advantage to everyone concerned. Among the economic gains will be a saving in the drug bill. We venture to suggest, therefore, that if practitioners act upon the results of their own experience in this collective investigation they will be assisting not only their patients and themselves, but their country.

LIVER TREATMENT OF PERNICIOUS ANAEMIA.

PROGRESS in therapeutics, though often slow, is occasionally accelerated in a way which borders on the dramatic. Had one been asked two years ago to compile a list of those tragic diseases which at the very moment of first diagnosis foretell inevitable and speedy death pernicious anaemia would certainly have had a prominent place; to-day there is probably no disease in which so confident a promise can be given of a complete and comparatively rapid recovery.

Writing on the subject of the liver treatment of pernicious anaemia in the early part of the present year we expressed the opinion that an attempt to draw conclusions as to the permanence of the good results thus obtained would be premature. Strictly speaking, some degree of caution is still necessary to-day, but it cannot be denied that the uniform and widespread success of the treatment which we owe to Minot and Murphy has been such as to justify the expectation that results so consistently gratifying in the initial stages would not disappoint us in the end. Hopes that were gaining ground were perhaps a little diminished by some observations made by Price Jones at the summer meeting of the Pathological Society of Great Britain and Ireland; he suggested that even after the apparent return of the blood to normal there might yet be a considerable excess of the abnormally large cells present in the blood stream, and that the "cures" were not really so complete as had been supposed. Similar observations have since been published in a recent paper by Davidson and McCrie¹; but, as Price Jones recognized, the available data as to the size of the cells in normal and healthy individuals are as yet too incomplete to enable us to draw any final conclusions in the matter. Whatever the outcome of these investigations may be, their bearing is chiefly on the nature of the pathological process underlying the disease, and not for the moment on the practical business of therapeutics. From experience already gained we know that once the anaemia has completely disappeared the amount of liver that the patient must continue to take varies with the individual; that in some patients it may be reduced considerably, while in others even a small diminution is followed by deterioration in the blood condition; and that the only recorded cases of relapse have been in patients who have reduced the liver diet too much or have abandoned it altogether.

So complete, indeed, has been the success of liver treatment that interest therein has largely passed from the therapeutic results themselves to the light they throw on our ideas in general about the etiology and pathology of the condition, and, in particular, on the possible need for relaxing somewhat the stringency of the criteria by which the disease is to be diagnosed. No new theory of the causation of pernicious anaemia has been established, but it appears that the conception of a primary haemolytic lesion is gradually being discarded. Those who look on the intoxication from the alimentary canal as the essential etiological factor have been forced to the hypothesis that the toxins elaborated in the intestine act either by interfering with the liver function, preventing the formation there of some substance which is essential for the maturation of the red cells, or by inflicting direct damage upon the patient's marrow. When considering the part played by the liver it is well to remember that kidney diet is quite as efficacious as liver; any hypothesis based on the supposition that liver diet merely provides some substance which a diseased or inefficient liver is incapable of producing must clearly be received with caution.

Diagnosis, too, has been not a little affected by careful study of the results of liver treatment. Minot, quite early in his work, suggested that any failure to respond to liver treatment was to be taken as an indication that the patient concerned was not in fact suffering from pernicious anaemia—a suggestion that was apt to raise a smile on the face of the sceptic who had then had no personal experience of the method. Careful review of a large series of cases, however, goes

far to confirm Minot's suggestion, and it is found that in almost all cases which are refractory some atypical signs can be detected which make an alternative diagnosis at least possible, if not probable. On the other hand, certain patients in whom some cardinal sign is absent may perhaps be more readily placed in the group of true pernicious anaemia if they show a characteristic response to liver therapy. Among such cases we may include the one recorded by Dr. Stanley Davidson in our present issue (p. 1123), in which the typical achlorhydria was lacking. There is a general tendency to insist rigidly on the absence of achylia as a bar to the diagnosis of pernicious anaemia, and Heath² excludes from his list of pernicious anaemia cases one which would certainly have been included but for the presence of free hydrochloric acid in the gastric contents. Other similar cases have been recorded in the past, and however freely we may whittle these down by rather ruthless criticism, there still remains a residue which withstands all attack; in the future a typical response to liver diet may perhaps be admitted as a first line of argument in support of the diagnosis.

During the past year a number of liver extracts have been put on the market, and have proved their worth as a substitute for whole liver. A good many workers seem to have gained the impression that whole liver, when it can be obtained and is well taken, gives in some indefinable way rather better results than the extracts; these clinical impressions may be well founded, but in so far as the results are open to accurate measurement no superiority of whole liver over liver extract has been demonstrated. This observation applies also to the interesting investigation recorded by Dr. Janet Vaughan³ on the increase in weight of patients on liver diet. In her series all the patients gained weight, some of them to a remarkable degree and with great rapidity; whether this has anything to do with pernicious anaemia, or whether it is a wholly independent phenomenon, remains to be seen; it may be that here we have a therapeutic indication of some significance in quite another direction.

IMPERIAL BUREAUX.

Our readers will remember that at the Imperial Agricultural Congress held in London at the end of last year, among many constructive recommendations made for the fostering of co-operation in agricultural research throughout the Colonies and Dominions was one for the creation of imperial bureaux in this country. The most important of the various functions of such bureaux was to disseminate the results of research in all parts of the Empire, and in other ways to co-ordinate the work of the various research stations at home and abroad. This recommendation has quickly borne fruit, and last week it was officially announced that eight such imperial bureaux were to be immediately formed in Britain—namely: Soil Science (Rothamstead), Animal Nutrition (Aberdeen), Animal Health (Weybridge), Animal Genetics (Edinburgh), Agricultural Parasitology (St. Albans), Plant Genetics, Non-herbage Plants (Cambridge), Plant Genetics, Herbage Plants (Aberystwyth), and Fruit Production (East Malling, Kent). While the main function of these new organizations is to foster agricultural research, the collection and dissemination of current information will affect other branches of applied science, and a number of these stations will have direct bearings on medicine. The Imperial Bureau of Animal Health will be established at Weybridge at the veterinary laboratory of the Ministry of Agriculture,

¹ Davidson and McCrie: *Lancet*, November 17th, 1928, p. 1014.

² Heath: *Journ. Amer. Med. Assoc.*, xci, 13, p. 928.
³ Vaughan: *Lancet*, May 26th, 1928, p. 1063.

under the directorship of Mr. W. H. Andrews, D.Sc., M.R.C.V.S. The laboratory was established in 1914 under the late Sir Stewart Stockman, and is mainly concerned with the diagnosis and control of the contagious diseases of animals. It is able to devote some time to research, in recent years notably on foot-and-mouth disease, poultry diseases, and similar subjects. The Imperial Bureau of Animal Nutrition is to be established at Aberdeen at the Rowett Research Institute under the directorship of Dr. Orr. This institute, although begun in 1914, was not opened until 1922. Its object is to obtain information which will enable animals to be fed and handled so as to produce the maximum amount of human food with the minimum cost. It has already produced valuable results, especially in relation to vitamins, mineral metabolism, and so on. Both of these bureaux are important from their own point of view; but they are also important from their relationship to human health and human nutrition. Much publicity has been given in recent years to comparative medicine, and there is now a growing appreciation of the debt which human medicine owes to animals. Accordingly the collected current information on these subjects should be highly informative to medical science in general. The Imperial Bureau of Agricultural Parasitology will be established under the directorship of Professor R. T. Leiper of the Institute of Agricultural Parasitology. This institute, an integral part of the London School of Hygiene and Tropical Medicine, is located at St. Albans, and there is no need to emphasize the importance to medicine, as well as to agriculture, of much of its work in the sphere of comparative parasitology. Few of man's parasites are exclusively human, and information as to the behaviour of these forms and their relations in animals is of fundamental importance to a complete understanding of how they affect man. Accordingly the collating of all the available current literature is of more than passing importance. In addition to the recommendations mentioned above, the Imperial Conference favoured the establishment of a chain of research stations throughout the tropical parts of the Empire. The station at Amami in East Africa, as well as the recently projected station in Queensland, will be included in this scheme; and last week the Government of the Union of South Africa approved of the inclusion of their veterinary research station at Onderstepoort also. This laboratory, though not strictly tropical, includes many of the more important tropical veterinary diseases within its purview. Its previous work, under the directorship of Sir Arnold Theiler, has been of a very high standard, and has included researches into botulism, mineral deficiencies, tick-carried diseases, and similar subjects of considerable interest to medicine generally. Its future work will presumably embrace even more varied subjects, and its value to tropical research be accordingly enhanced.

PLAGUE IN CHINA.

WITH the possible exception of Hong-Kong, where there were six cases last spring, the greater part of China would appear to have escaped plague during 1928. While India and French Indo-China are widely invaded, there have been no recorded epidemics of this disease in South and Mid-China during the course of the year. It is from the northern endemic centre of Outer Mongolia that plague, helped by the recent extension of new railway lines, has spread down through Inner Mongolia to the province of Manchuria. These railways have opened up the land for cultivation, mostly by poor immigrant farmers coming from Shantung, who live under crowded and often insanitary conditions. Early last August suspicious deaths occurred in the region of a place called Tung Liao, 400 miles from Harbin, the big Russo-Chinese city in North Manchuria, and investigations by Dr. Wu Lien-Teh and Dr. J. W. H.

Chun, both Cambridge graduates, revealed the presence of *B. pestis* in femoral buboes. Probably, as was the case in 1927, some few isolated foci had been smouldering on the Mongolian frontier since early summer, and the disease had later taken on an active form. It is interesting to note, as showing the activities of the League of Nations Health Committee and its Far Eastern Health Bureau, that it was in response to telegraphic inquiries from these bodies in Geneva and Singapore that Dr. Wu, head of the North Manchurian Plague Prevention Service, set out for Tung Liao to investigate on the spot. About the same time telegrams were received from the Mongolian and Russian medical departments of Urga requesting the Plague Service at Harbin to send 3,000 doses of vaccine and 10 litres of serum to deal with plague conditions there. These supplies were at once forwarded by Siberian railway to Verkneudinsk, and thence by aeroplane to Urga, the remote capital of Mongolia. By the end of September over 400 deaths had been recorded at Tung Liao, and protective inoculation was conducted on a wide scale, in addition to antiplague serum for treatment of the sick. House-to-house visits for detection of cases and isolation of contacts were largely responsible for the dying down of the epidemic, during which it was estimated that 92 per cent. of the cases ended fatally. Experiments in the line of ascertaining whether human ectoparasites can convey plague infection have tended to prove this to be the case. Drs. Wu Lien-Teh and Pulitzer, working in Harbin, successfully inoculated guinea-pigs, which died on the ninth day showing all signs of subacute plague after having been bitten by human *Pulex irritans* (two insects after twenty-four hours' starvation), and this discovery of direct infection by the human flea has rather complicated the earlier Indian theory of bubonic plague being only developed through the rat-flea. Perhaps the fact that the habits of the villagers in sleeping on unswept "kangs" (heatable hollow platforms) with their clothes off may explain the unusual prevalence of axillary, cervical, and septicaemic cases. In the severe North Manchurian epidemics of 1911 and 1921, outbreaks which had arisen from a tarabagan (Siberian marmot) showed a strong tendency to develop pneumonic features. In the neighbouring province of Shansi a serious outbreak of bubonic plague occurred during October, about seventy-five miles west of the provincial capital, Tai Yuan Fu. It affected eighty-four villages, and by October 28th it was estimated that there had been over 2,000 deaths. The local Chinese seem to have been unable to cope with the situation, and finally dispatched troops from Tai Yuan Fu for the purpose of drawing a cordon round the infected area and preventing the further spread of the epidemic. Since autumn there have been famine conditions in widespread areas of North China; these result in lowering the body resistance and in the huddling together of the people, which are favourable factors for the spread of epidemics. China is still a long way behind in the matter of proper and adequate medical supervision, but this should come in time. The Chinese people have on previous occasions given proof of their responsiveness to Western methods of dealing with epidemics, and when scientifically trained doctors are available in much greater number than heretofore, progress in public health measures will be welcomed by the natives. The epidemic in Shansi Province was officially stated to be of bubonic type, and it was also reported to be dying down. On this ground offers of help in antiplague measures, made by foreigners, were declined. But on November 14th a telegram was sent from Dr. Curran of the American Board Mission in Fenchow (Shansi) stating that there is now an outbreak of pneumonic type, and asking for further help to combat this. Doctors from the American and the English Baptist Missions are proceeding to the area of the outbreak.

THE TERCENTENARY OF MALPIGHI.

THE year which marks the tercentenary of the publication of *De Motu Cordis* marks also that of the birth of Marcello Malpighi, Italian physician and philosopher. Founder of histology, greatest of microscopists, experimental physiologist, pioneer of iconographic embryology, patient and devoted physician, Malpighi lives in the history of medicine not only as a genius who effected a revolution in scientific thought and method, but as a most lovable personality. The plates accompanying his Royal Society memoirs are an indication of his quality as an embryologist; the *De formatione pulli in ovo* and *De ovo incubato*, of his powers of observation and description. His name, as histologist, has been preserved in the Malpighian layers of the skin, in the Malpighian bodies of the spleen, and in the Malpighian pyramids, bodies, tufts, and capsules of the kidney. In *De viscerum structura* he gave the first account of the lymphatics and splenic nodules of lymphadenoma, the disease later associated with the name of Thomas Hodgkin. Above all, he demonstrated that the capillary anastomosis between arteries and veins of the lungs (which to Harvey was a conceptual hypothesis) was a histological reality. The tercentenary of Malpighi was celebrated in the Section of the History of Medicine of the Royal Society of Medicine on December 12th by a lecture by Professor Franchini, director of the institute of tropical diseases in Bologna. As becomes a fellow Italian and a son of Malpighi's own university, Professor Franchini made rather liberal use of high colours in portraying this pioneer, but he succeeded in giving a vivid picture of the state of science in seventeenth century Italy. This was a time when science was fighting at close quarters with ignorance and prejudice. When Malpighi was an infant Galileo was before the Inquisition, and the fires that burnt Michael Servetus in Geneva and Giordano Bruno in Rome had not entirely gone out. Persecutions, odious though petty, were inflicted upon Malpighi himself. He shared the obloquy attaching to those who practised dissection, which was judged to be desecration of the dead. His chief enemies, however, were his fellow scientists, who broke his microscopes, wantonly destroyed his valuable manuscripts, and may even have set fire to his house. He bore these persecutions in silence and with magnanimity. When he removed from Bologna to Messina, where for four years he was professor of medicine, the persecution followed him, and eventually caused him to relinquish his chair. The Church seems to have been his protector; at all events, he enjoyed the patronage of a cardinal, and in 1691, three years before his death, he became private physician to Pope Innocent XII. Nor was it the general populace who made his scientific pursuits so difficult, for during his lifetime they reared a monument to him in his own city. He had many powerful friends, one of them Borelli, a distinguished mathematician and disciple of Galileo, in whose house at Pisa Malpighi practised his anatomical dissections and researches. In this house he made the discovery of the spiral structure of the cardiac fibres, a discovery which Borelli also claimed to have made. Returning to Bologna, he followed many lines of study, including the mechanism of respiration, the nature of the blood—whose red corpuscles he once described as "fat globules looking like a rosary of red coral"—and the structure of the brain. His work became known far beyond the confines of Italy. To the Royal Society of London he contributed a striking piece of research on the silkworm, and later other work in what would now be described as embryology and biology. He worked upon the embryology of the chick, studied the porcupine, the lizard, and the frog, and made innumerable researches upon the anatomy of plants, giving admirable accounts of germination. Professor Franchini quoted Haeckel as stating that only Lamarek and Wolf in the

eighteenth century, and Darwin and Müller in the nineteenth, could rank with Malpighi, the naturalist and philosopher. "In every observation of his," said the lecturer, "appeared the genius which understood clearly what was seen and went straight upon its aim. He did not pay attention to ridiculous disputes, nor lose time in useless scholastic arguments. He was a diligent student, a model of prudence, magnanimity, and modesty in an environment often hostile." Professor Franchini declared that if the writings of Malpighi had not fallen for two centuries into an unmerited oblivion we should see his name connected with a great number of tissues and functions which he was the one really to discover and describe. His manuscripts have been collected in sixteen thick volumes in the library of the University of Bologna, and there are others in Rome and elsewhere. Marcello Malpighi's latter days were rather pathetic. Professor Franchini described how he was summoned, an ill and tired man, to Rome to receive the title of pontifical head physician. In Rome the ruling passion was still upon him, and he continued many botanical, zoological, and clinical observations until he was struck down by cerebral haemorrhage. He got better, but shortly afterwards he was again stricken, and not the most energetic treatment could revive him. He died in the Quirinal Palace on November 29th, 1694, at the age of 66. A few weeks ago, by permission of the authorities, the tomb and coffin of Malpighi were opened. A skull of large size was found, well preserved in the upper part; the temporal bone on one side had been, it appeared, cut away. Other bones were found, chiefly of the legs, but there were no documents or other objects in the coffin.

ULTRA-VIOLET LIGHT IN THE HOME.

ON October 13th we published the papers read by Professor Dixon and Dr. Heald before the Section of Radiology and Physio-Therapeutics at Cardiff, and emphasized in a leading article the risk to the public arising from the administration of treatment by radiation and electricity at the hands of unqualified practitioners. Any doubt as to the need for that warning should be dispelled by perusal of the report in the *Times* of December 13th of a lecture on the applications of electricity to medical practice, delivered by Mr. G. G. Blake at the Royal Society of Arts before a meeting presided over by an eminent man of science, Sir Oliver Lodge. Mr. Blake seems to have convinced himself that not nearly enough unqualified persons are administering ultra-violet ray treatment. His ideal is an installation in every home, to be used by the members of the family upon themselves or upon each other. With reasonable care, he holds, the treatment is harmless, its administration requiring only a little common sense. He admits, indeed, that over-exposure may produce the "familiar sunburn so prevalent at the seaside in holiday time," and that it is necessary to protect the eyes and the back of the head from the rays. But, having said this, and thrown out a suggestion that when lassitude follows exposure to ultra-violet light it is as well to stop treatment for a while, he feels apparently that he has issued warnings enough. The full text of the lecture is not before us, but in the newspaper report there is no word about the light allergy following overdosage, described by Professor Dixon in his paper; nothing about the fact that treatment may be contraindicated in the presence of arterio-sclerosis, renal disease, some forms of heart disease, and phthisis. Nor is there any hint that the assessment of dosage—which seemed so easy in the early days of ultra-violet therapy before anybody knew much about it—is now recognized to present a difficult technical problem, to be solved only by those who have had adequate training. Medical men and women are not inclined to dismiss the dangers of ultra-violet

therapy in this light-hearted fashion. Perhaps as individuals with a highly developed sense of responsibility they are unduly timid; but one may recall in this connexion an aphorism of Mr. Bertrand Russell's to the effect that when on any subject all the experts are agreed, the opposite opinion cannot be held to be certain. Anyone who said in public that every household ought to keep a stock of arsenic or strychnine for self-administration by the light of "common sense" would not be taken very seriously, except perhaps by the police. But a manufacturer of arc lamps, or a lecturer in John Street, Adelphi, can give analogous advice in relation to actinotherapy without protest except in a medical journal. There may be something to be said in favour of trusting certain highly intelligent persons to administer ultra-violet light to themselves under medical directions; we may even grant that others, so robust as not to need this treatment at all, may indulge in self-radiation without coming to much harm; but we cannot too strongly condemn the suggestion that arc lamps may be installed in every household and used with benefit and without appreciable risk by all and sundry.

MEDICAL SOCIETY OF LONDON.

THE programme for the second half of the current session of the Medical Society of London is now before us. The first item is a pathological evening on January 14th, commencing at 8 o'clock. The following general discussions have been arranged: January 28th, "Starvation in treatment," introduced by Dr. Edmund Spriggs; February 11th, "Earache," Dr. Morland McCrea and Mr. Herbert Tilley; February 25th, "Acute Intestinal Obstruction," Professor A. H. Burgess and Mr. C. H. S. Frankau; March 11th, "Chronic dyspepsias of children over the age of infancy," Dr. Reginald Miller and Dr. W. G. Wyllie; March 25th, "Medical indications for the induction of abortion and premature labour," Mr. Eardley Holland, Dr. B. T. Parsons-Smith, and Dr. Bernard Hart. These discussions will all begin at 8.30 p.m. The Lettsomian Lectures on "Dermatology in relation to other branches of medicine" will be given by Dr. H. W. Barber, at 9 p.m. on February 18th and 27th, and March 6th.

THE KING'S ILLNESS.

THE statement printed in our last issue at page 1106 brought the medical history of the King's illness up to 3 p.m. on Wednesday, December 12th, a few hours after pus had been located in the pleural cavity at the posterior base of the right lung, immediately above the diaphragm. The empyema was evacuated by rib resection under a general anaesthetic that evening, and the reports on Thursday indicated that His Majesty had come safely through the operation, and that drainage was proceeding. While the bulletins of Friday night and Saturday were not so reassuring about the patient's strength, those of Sunday and of Monday morning recorded some general progress and better sleep. After another temporary setback on Monday there was again some improvement, which has since been maintained.

The ups and downs of the past few days will not have surprised any medical reader of the bulletins; they were more than likely to happen after an operation for empyema in a patient of 63, already exhausted by a streptococcal blood infection. The public, too, have had many warnings that progress could only be slow and intermittent, and that anxiety must continue. The inevitable oscillations between hope and fear have none the less been very trying. Our King belongs to his people, and his illness has cast a shadow over every home.

We are able to print below a further authoritative statement, dated Wednesday, December 19th, 8 p.m., for the information of our readers, and through them for the steadying of public opinion. It is in keeping with the spirit of the age that this news, technical as it is, should have early and wide publicity.

"There are signs that the King's illness is producing in the public mind a sensitiveness, only too natural, caused by weeks of anxiety, and producing too easily alarm and therefore distress, both of which it is most desirable to avoid. Doctors, in their various spheres, can do much, by their knowledge, to maintain hope and confidence.

"The present condition of His Majesty can be best understood by recalling earlier stages of this severe illness. In the first phase, gradual in its onset, there were to be noted general infection with imperfect localization—little or no cough and only one small patch of pleuritic friction; blood culture positive (streptococcus); an irritative state of the nervous system which produced profound distress and sense of illness. Yet with these was a wish, born of quiet courage and the habit of duty, to make light of the illness and hold on to work, thus adding to the wear and tear of the fever. Towards the end of this first phase came an accentuation of pleuritic friction which extended to the diaphragm. The second phase was one of increasing toxæmia, with dusky appearance, dry cracked tongue, periods of delirium, exhaustion—in short, a clinical picture resembling that of a case of severe typhoid fever in the third and fourth weeks, but with the added anxiety of attacks of dyspnoea and cyanosis, due to strain on the heart. With the next phase came an abatement of fever and some evidence of localization. The blood culture was now negative, toxæmia was less, delirium subsiding. The localization in the right lung did not result at this stage in effusion, as shown by puncture and excellent radiographs. A few days later the temperature rose rather abruptly to a higher level, and on December 12th there was evidence at the extreme right base of an effusion which had commenced between the lung and the diaphragm. Drainage by means of rib resection was performed on the same day under general anaesthesia (gas-oxygen-ether). The predominant organism in the empyema has now been established to be identical with the streptococcus found in the blood.

"Though the infective process has become gradually localized, its severity, coupled with the lowered vitality resulting from the length of the illness, must make the progress of healing difficult and tedious. Local sloughing, however, is less pronounced to-day, and tissue reaction apparent. To stimulate vitality of tissues a brief general exposure to ultra-violet rays from a mercury lamp has been made each day since December 15th. The effect of these exposures is being checked by leucocyte counts and estimation of the bactericidal power of the patient's blood. There is reason to think that this employment of the ultra-violet rays has, in combination with the treatment mentioned in previous statements, been beneficial.

"It is hoped that the foregoing account will help towards an understanding of the future course of the illness. It will be apparent to medical men that not only the severity and length of the infection, but the exhaustion resulting therefrom, must make progress slow and difficult. At the same time, dangerous phases of the illness have been surmounted, and there are increasingly solid grounds for hoping that recovery will result from this long and anxious struggle."

The following medical men, in addition to those previously mentioned, have contributed to the care of His Majesty: Sir Hugh Rigby, Dr. F. E. Shipway, Dr. R. S. Woods, and Dr. F. D. Howitt. The names of the nurses in attendance are: E. Gordon, Catherine Black, Rosina Davies, and N. M. Purdie.